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Perspectives in Disease Prevention and Health Promotion

Premature Mortality Due to Unintentional Injuries — United States, 1983

As life expectancy has increased in the United States, the leading causes of death have shifted to those diseases occurring late in life, such as heart disease, cancer, and stroke. Mortality rates have long been used to measure the magnitude of these diseases and to determine resource allocation in public health. However, this traditional measure of mortality does not provide the information needed to compare the amount of premature mortality by cause of death. In 1950, an index was proposed that expressed deaths in terms of years of life lost (YLL) to complement conventional death rates (*1*). However, the YLL index was little used during the 1950s and 1960s. A 1965 study noted that injuries caused a significant loss of years of life and that the allocation of health resources must consider not only the number of deaths by cause but also by age (*2*). During the 1970s and early 1980s, the YLL index became an accepted tool for state and local health planners (*3*). In 1982, CDC began reporting years of potential life lost before age 65 years (YPLL) in Table V of the *MMWR*. The YPLL index draws attention to potentially preventable mortality occurring early in life.

Unintentional injuries are the leading cause of YPLL. In 1984, they accounted for 2,308,000 YPLL, or about 19.6% of all YPLL (see Table V, page 365). Overall, unintentional injuries (E800-E949)* accounted for 2,277,000 YPLL in 1983, or about 19.4% of all YPLL. This report focuses on the 10 leading causes of YPLL due to unintentional injury for 1983, the last year for which complete data are available.

For this report, age- and cause-specific mortality data obtained from the National Center for Health Statistics (NCHS) were used to determine the number of deaths and to calculate the YPLL for each cause of unintentional injury death in the United States during 1983. Population estimates from the U.S. Bureau of the Census were used to calculate YPLL rates.

Among unintentional injuries, motor vehicle traffic crashes (E810-E819) are the leading cause of both YPLL and deaths (Figure 1). Among all other causes of death, motor vehicle traffic crashes rank only below malignant neoplasms and diseases of the heart for YPLL. The remaining 10 leading causes of YPLL from unintentional injuries, in order, are: drownings (E910),† fire and flames (E890-E899), poisonings (E850-E869), falls (E880-E888), firearms

*Based on The International Classification of Diseases, 9th Revision, Supplementary Classification of External Cause of Injury.
†Includes those not related to water transport.

Unintentional Injuries — Continued

(E922), choking on food or object (E911-E912), water transport (E830-E838), air transport (E840-E845), and motor vehicle nontraffic crashes (E820-E825).

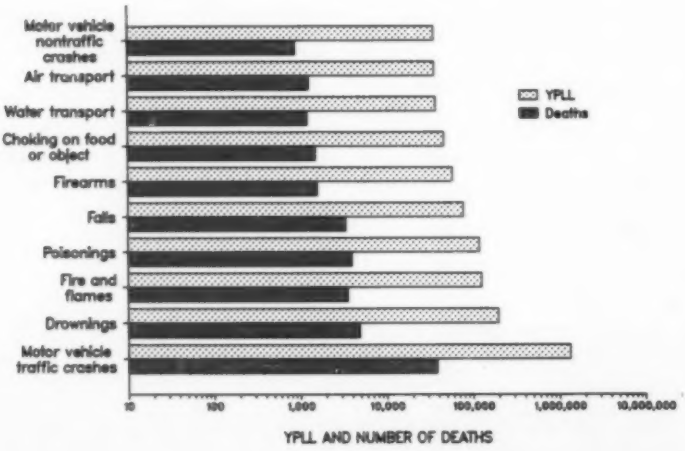
The rank order of the cause-specific numbers of deaths is the same as that of YPLL, except for fire and flames (fourth instead of third) and water transport (ninth instead of eighth).

Crude YPLL rates per 100,000 population and average YPLL per death (equivalent to 65 minus the average age at death) vary by each of the 10 leading causes of unintentional injury YPLL and by the sex of the victim (Table 1). The variation by sex in the YPLL rates is measured in the YPLL rate ratios. Males have higher YPLL rates than females for each of the listed unintentional injury causes of death. The highest YPLL rate ratios for males compared with females are for deaths due to water transport and deaths due to firearms, whereas the lowest are for deaths due to fire and flames and deaths due to choking on food or object. Except for motor vehicle traffic crashes, poisonings, and falls, the average YPLL per death is higher for females than males. The highest average YPLL per death is for that associated with motor vehicle nontraffic crashes for females, and the lowest is for that associated with falls for females.

Both YPLL and mortality rates highlight the importance of injuries as a health problem among children. Annually, about 10,000 children aged 1-14 years die from injuries (*4*). Injuries account for more deaths among children than any disease. The six leading causes of unintentional injury death among children are: motor vehicles, drownings, fire and flames, choking on food or object, firearms, and falls (*5*). About 40% of motor vehicle deaths among children involved the child as a pedestrian (*4*). Considered as a separate cause of deaths among children, pedestrian death is the third leading cause of unintentional injury death after deaths among motor vehicle occupants and deaths due to drowning.

Reported by Div of Injury Epidemiology and Control, Center for Environmental Health, CDC.

FIGURE 1. Years of potential life lost (YPLL) and number of deaths for the 10 leading causes of unintentional injury YPLL — United States, 1983



Unintentional Injuries – Continued

Editorial Note: Injury exacts an enormous toll in the United States, causing more than 140,000 deaths and over 3.5 million years of potential life lost per year (see Table V, page 365). Intentional injuries result from interpersonal or self-inflicted violence and include homicide, assaults, suicide and suicide attempts, child abuse, and rape. Unintentional injuries include those resulting from motor vehicle collisions, falls, fires, poisonings, and drownings.

TABLE 1. Years of potential life lost (YPLL) rates per 100,000 population, YPLL rate ratios, and average YPLL per death, by the 10 leading causes of unintentional injury YPLL and by sex — United States, 1983.

Cause of death	YPLL rate	(YPLL rate ratio*)	Average YPLL per death
Motor vehicle traffic crashes			
Male	953.1		35.1
Female	334.3	(2.9)	34.6
Drownings†			
Male	156.7		39.9
Female	33.7	(4.7)	43.9
Fire and flames			
Male	73.9		33.7
Female	47.8	(1.5)	38.4
Poisonings			
Male	81.7		30.4
Female	33.4	(2.4)	29.1
Falls			
Male	59.5		23.6
Female	16.1	(3.7)	21.6
Firearms			
Male	49.0		36.8
Female	7.8	(6.3)	38.2
Choking on food or object			
Male	26.8		27.7
Female	14.5	(1.8)	29.5
Air transport			
Male	29.3		28.0
Female	5.9	(5.0)	31.5
Water transport			
Male	32.7		30.6
Female	3.8	(8.6)	34.5
Motor vehicle nontraffic crashes			
Male	26.6		39.1
Female	8.3	(3.2)	45.8

*For males compared with females within each cause-specific category.

†Includes those not related to water transport.

Unintentional Injuries – Continued

Injuries occur during work and include unintentional trauma (e.g., motor vehicle-related injuries, falls, and electrocutions) and intentional injuries. One in every three Americans suffers an injury each year, and 80,000 persons suffer permanent disabling injuries from brain or spinal cord trauma (*6*). Direct and indirect costs of injury are estimated at $75-$100 billion per year.

The use of YPLL has become a mainstay in the evaluation of the impact of injuries on public health. Although YPLL is a valuable index in analyzing various causes of injury mortality, this report also includes YPLL rates, YPLL rate ratios, and average YPLL per death. The use of YPLL rates allows comparison of YLL between different populations. For each of the 10 leading causes of unintentional injury YPLL, males have a higher rate of YPLL than females. These higher rates in males may reflect a greater involvement in hazardous activities, in use of alcohol (*4*), and in risk-taking behavior. However, the use of average YPLL per death shows that, among those who die from unintentional injuries, females, on average, are dying at a younger age than males for each of the 10 leading causes of unintentional injury YPLL, except for motor vehicle traffic crashes, poisonings, and falls. Persons are dying from drownings, motor vehicle nontraffic crashes, and firearms at a younger age, on average, than from the other leading causes of unintentional injury YPLL.

When injuries are studied epidemiologically, many opportunities for prevention may become evident. What is known about host, agent, and environment can be translated into programmatically sound interventions that reduce injury morbidity and mortality. A project of the Carter Center of Emory University entitled, "Closing the Gap," examined the impact of the injury problem and its potential reduction by applying existing scientific and technical knowledge (*7*). The Carter Center estimates that, by applying broad-based mixed strategies, motor vehicle-related fatalities and injuries could be reduced by about 75% (*8*). About 23,000 deaths per year result from unintentional injuries that occur in the home (*8*). The Carter Center estimates that targeted interventions could reduce home injuries by about 50% (*8*). Appropriately targeted interventions also could reduce by about 25% all fatal and serious injuries in which alcohol is an important factor (*8*).

Past and current research and surveillance efforts have identified many prevention strategies to be applied and evaluated, and a growing number of state and local public health agencies and other organizations are now in the process of meeting this challenge. State agencies, in particular, can assume several responsibilities in injury prevention, including: (1) coordinating their activities with local agencies, academic institutions, and private entities; (2) conducting injury surveillance; (3) developing intervention plans with other involved groups; (4) providing information to the public; and (5) providing technical advice on legislative proposals needed to support injury-control efforts.

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Premature Mortality Due to Suicide and Homicide — United States, 1983

In 1984, suicide and homicide together ranked as the fourth leading cause of years of potential life lost before age 65 (YPLL). They accounted for 1,247,000 YPLL or 10.6% of all YPLL (Table V, page 365). In this report, YPLL was calculated using data from the National Center for Health Statistics' detailed mortality computer tapes for 1983, the latest year for which tapes are available. Data were analyzed on YPLL attributable to suicide and homicide individually, by sex, race (white, black, other races), weapon or method of injury, and year. To compare differences in YPLL across time and among different race, sex, and age groups independent of changes and differences in population size, crude YPLL rates per 100,000 persons were calculated.

SUICIDE

Considered alone, suicide is the fifth leading cause of YPLL in the United States, accounting for 631,990 YPLL in 1983. Suicides among white males accounted for 70.6% of the total suicide-attributable YPLL (Table 2). White females accounted for another 19.7%. White males had the highest crude YPLL rate due to suicide in 1983 (458/100,000), followed by males of other races (369/100,000), black males (283/100,000), and white females (122/100,000).

Suicides committed with firearms accounted for 363,828 YPLL in 1983, comprising 57.6% of the total YPLL attributable to suicide. This proportion was higher for males (60.9%) than for females (45.4%). Among males, hanging accounted for the next highest proportion of total YPLL (17.2%), followed by poisoning by gas (8.7%) and poisoning by solids or liquids (6.7%). Among females, poisoning by solids or liquids comprised the next highest proportion of YPLL due to suicide (25.9%), followed by poisoning by gas (10.5%) and hanging (9.8%).

The crude YPLL rate attributable to suicide increased for both black and white males from 1968 to 1983 (Figure 2). For white males, the YPLL rate increased 52.7% from 300/100,000 in 1968 to 458/100,000 in 1983. For black males, the YPLL rate increased 65.5% from 171/100,000 to 283/100,000. The YPLL rates for white and black females did not change appreciably during this period.

TABLE 2. Years of potential life lost before age 65 years (YPLL) due to intentional injuries, by sex and race — United States, 1983

Sex and race	Suicide YPLL			Homicide YPLL		
	Total	(%)	Rate*	Total	(%)	Rate*
Males						
White	445,890	(70.6)	458.1	245,139	(40.2)	251.9
Black	37,524	(5.9)	282.6	212,985	(35.0)	1,603.9
Other	11,485	(1.8)	368.7	10,408	(1.7)	334.1
All	494,899	(78.3)	435.2	468,532	(76.9)	412.0
Females						
White	124,475	(19.7)	121.7	81,193	(13.3)	79.4
Black	9,085	(1.4)	61.4	55,186	(9.1)	373.1
Other	3,531	(0.6)	108.9	4,333	(0.7)	133.6
All	137,091	(21.7)	114.0	140,712	(23.1)	117.0
Total	**631,990**	**(100.0)**	**270.1**	**609,244**	**(100.0)**	**260.3**

*Per 100,000 persons.

Suicide and Homicide — Continued

HOMICIDE

Homicide accounted for 609,244 YPLL in 1983, making homicide alone the sixth leading cause of YPLL in the United States. Homicides among males accounted for more than three-quarters of the total YPLL due to homicide (Table 2); 40.2% of homicide-attributable YPLL was due to white males, and 35.0%, to black males. In 1983, the crude YPLL rate due to homicide was highest for black males (1,604/100,000), followed by black females (373/100,000), males of other races (334/100,000), and white males (252/100,000).

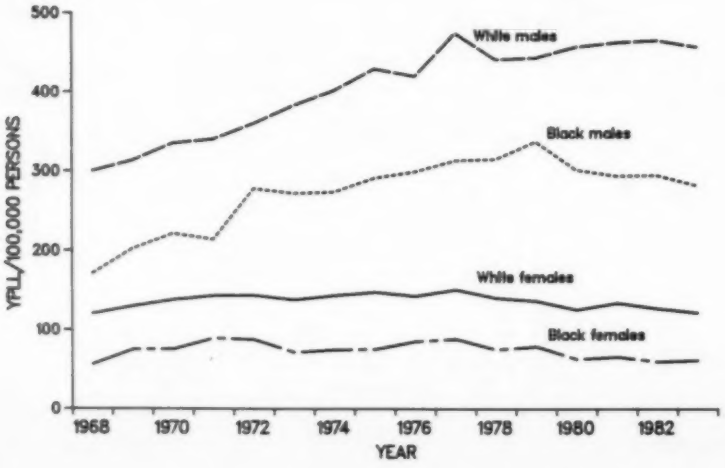
Firearm homicides accounted for 375,369 YPLL in 1983, or 61.6% of the total homicide-attributable YPLL. This proportion was higher for males (66.2%) than females (46.4%). Homicides committed with cutting and piercing instruments accounted for 21.6% of the total YPLL for males and 18.6% of the total YPLL for females.

From 1968 to 1983, the crude YPLL rate due to homicide increased by 24.4%, from 209/100,000 to 260/100,000. During this period, the crude YPLL rate was 6-11 times higher for black males than for white males and 5-7 times higher for black females than white females (Figure 3). From 1968 to 1983, the crude YPLL rate increased for white males and females by 60.5% and 43.6%, respectively, and decreased for black males and females by 8.7% and 4.6%, respectively.

Reported by Div of Injury Epidemiology and Control, Center for Environmental Health, CDC.

Editorial Note: The number of YPLL is a measure of public health impact and is dependent on population size. For this reason, YPLL alone is inadequate to compare premature mortality across different years or across subpopulations, such as blacks and whites. This consideration is important, for example, when comparing homicide-attributable YPLL among blacks with that among whites. While whites accounted for a greater proportion than blacks of the total homicide-attributable YPLL in 1983 (53.6%, compared with 44.0%), the crude YPLL rate was

FIGURE 2. Suicide-attributable years of potential life lost, by year, race, and sex — United States, 1968-1983



Suicide and Homicide — Continued

5.9 times higher for blacks than whites in that year. Moreover, although the crude suicide-attributable YPLL rate increased only 0.8% for white females from 1968 to 1983, the total number of suicide-attributable YPLL for white females increased 15.1% (from 108,099 to 124,475), mainly due to population increases.

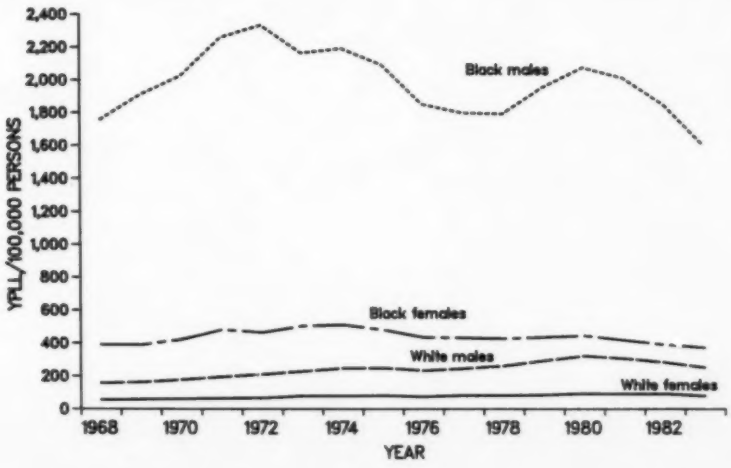
Relative to other important causes of premature death, intentional injuries take their heaviest toll among the young. Over two-thirds of YPLL due to both suicide and homicide is attributable to deaths among persons under 35 years of age. In contrast, almost two-thirds of YPLL due to heart disease is attributable to deaths among persons 45 years of age or older. This observation is underscored by the fact that the average YPLL per death for heart disease is 2.1 years, compared with 22.3 years for suicide and 30.6 years for homicide. Injury prevention is, therefore, an appropriate focus for programs designed to target young populations, such as maternal- and child-health programs.

Firearms have been previously noted to be the weapon used in the largest proportion of deaths due to suicide and homicide (*1,2*). These data clearly indicate that their role in intentional injury should be examined more closely.

For both homicide and suicide, persons of nonblack minority races were noted to be at intermediate risk between blacks and whites. However, this finding is difficult to interpret. Nonblack minority races comprise a relatively small, heterogeneous population with varying risks of homicide and suicide. It has been reported that Native Americans are at higher risk of both homicide and suicide than whites, but that, in general, Asian/Pacific Islanders are not (*3*). Further research is needed to identify specific Native American populations at highest risk of death from intentional injuries and develop interventions appropriate for these high-risk groups.

Black males comprised only 7.0% of the total population in 1983 (*4*), but homicides

FIGURE 3. Homicide-attributable years of potential life lost by year, race, and sex — United States 1968-1983



Suicide and Homicide – Continued

among black males accounted for 35.0% of the total YPLL attributable to homicide in that year. Future research should clarify the role that various factors play in homicide deaths so that preventive interventions might be devised.

Although the overall suicide rate has not changed much since 1968, the crude suicide-attributable YPLL rate has increased considerably because of the changing age distribution of suicide victims. In the past, suicide rates were relatively low among the young and increased with increasing age. However, beginning in the early 1950s, suicide rates have gradually increased among young persons, particularly among young white males, while decreasing among older persons (*5,6*). In the past, many ideas about the causes of suicide and ways to prevent it were derived from concepts of suicide as a phenomenon primarily affecting older people. This marked increase in the rate of suicide among young people suggests a need to reexamine past assumptions.

YPLL due to suicide is probably substantially underestimated because suicides are thought to be underreported on death certificates (*4,5*). Reasons for underreporting include difficulties in establishing suicidal intent, certifier error or bias, and the lack of awareness of a suicide because a body was never recovered (e.g., drowning after jumping off a bridge).

(Continued on page 365)

TABLE I. Summary—cases specified notifiable diseases, United States

Disease	22nd Week Ending			Cumulative, 22nd Week Ending		
	May 31, 1986	June 1, 1985	Median 1981-1985	May 31, 1986	June 1, 1985	Median 1981-1985
Acquired Immunodeficiency Syndrome (AIDS)	236	124	N	5,288	2,932	N
Aseptic meningitis	97	84	84	1,840	1,577	1,672
Encephalitis: Primary (arthropod-borne & unspec.)	13	21	15	315	381	380
Post-infectious	2	5	1	40	59	43
Gonorrhea: Civilian	12,938	12,435	13,867	340,912	329,991	371,185
Military	227	221	360	6,638	8,049	10,172
Hepatitis: Type A	295	334	334	9,174	8,921	9,355
Type B	442	489	485	10,615	10,427	9,741
Non A, Non B	57	73	N	1,436	1,749	N
Unspecified	70	92	123	2,071	2,281	3,056
Legionellosis	13	7	N	223	255	N
Leprosy	5	4	4	115	160	99
Malaria	12	18	22	309	314	320
Measles: Total*	171	69	58	2,929	1,331	1,331
Indigenous	136	63	N	2,777	1,082	N
Imported	35	6	N	152	249	N
Meningococcal infections: Total	37	36	52	1,311	1,261	1,470
Civilian	37	36	52	1,309	1,256	1,467
Military	-	-	-	2	5	6
Mumps	161	51	66	1,757	1,693	1,840
Pertussis	29	49	27	1,037	654	654
Rubella (German measles)	8	38	38	233	240	511
Syphilis (Primary & Secondary): Civilian	394	430	458	10,590	10,432	12,574
Military	1	3	3	79	79	157
Toxic Shock syndrome	5	9	N	154	167	N
Tuberculosis	378	292	370	8,536	8,337	9,274
Tularemia	5	9	5	29	54	65
Typhoid fever	6	16	6	104	125	141
Typhus fever, tick-borne (RMSF)	20	40	41	111	129	139
Rabies, animal	85	127	127	2,273	2,148	2,601

TABLE II. Notifiable diseases of low frequency, United States

	Cum 1986		Cum 1986
Anthrax	-	Leptospirosis	17
Botulism: Foodborne	4	Plague	-
Infant	22	Poliomyelitis, Paralytic	-
Other	-	Psittacosis (Minn. 2, Del. 1, Mont. 1)	30
Brucellosis (Mo. 2, S. Dak. 1, Tex. 1)	27	Rabies, human	-
Cholera	-	Tetanus	17
Congenital rubella syndrome	2	Trichinosis	9
Congenital syphilis, ages < 1 year	11	Typhus fever, flea-borne (endemic, murine)	10
Diphtheria	-		

*Nineteen of the 171 reported cases for this week were imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending May 31, 1986 and June 1, 1985 (22nd Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1986	1986	Cum. 1986	Cum. 1986	Cum. 1986	Cum. 1985	1986	1986	1986	1986	1986	Cum. 1986
UNITED STATES	5,288	97	315	40	340,912	329,991	295	442	57	70	13	115
NEW ENGLAND	216	1	9	2	7,756	10,039	5	34	2	5	1	3
Maine	11	-	-	-	399	397	-	3	-	-	1	-
N.H.	6	-	2	-	203	210	-	-	-	-	-	-
Vt.	2	-	2	1	108	110	-	1	-	-	-	-
Mass.	112	-	2	-	3,398	3,762	4	22	1	4	-	3
R.I.	13	-	-	-	755	752	-	-	-	-	-	-
Conn.	72	1	3	1	2,893	4,808	1	8	1	1	-	-
MID. ATLANTIC	2,071	10	50	1	57,848	46,529	12	31	3	13	-	9
Upstate N.Y.	199	2	19	-	6,576	6,705	4	5	2	1	-	1
N.Y. City	1,405	1	11	-	33,647	21,062	-	-	-	11	-	7
N.J.	321	4	6	-	7,516	8,528	6	11	1	1	-	-
Pa.	146	3	14	1	10,109	10,234	2	15	-	-	-	1
E.N. CENTRAL	308	10	68	6	44,036	46,561	19	43	3	7	1	4
Ohio	65	3	18	2	10,894	11,839	9	16	-	2	-	-
Ind.	29	-	7	2	4,911	4,173	-	1	1	2	-	-
Ill.	141	3	18	1	11,895	13,283	5	6	1	1	-	3
Mich.	56	4	23	1	14,208	13,244	5	20	1	2	1	1
Wis.	17	-	2	-	2,128	4,022	-	-	-	-	-	-
W.N. CENTRAL	88	5	10	7	15,154	16,589	4	18	3	-	2	2
Minn.	42	1	6	-	2,168	2,441	1	6	-	-	-	1
Iowa	7	2	4	-	1,542	1,755	-	2	1	-	1	-
Mo.	19	1	-	-	7,809	7,791	-	9	2	-	-	-
N. Dak.	2	-	-	-	128	120	-	-	-	-	-	-
S. Dak.	1	1	-	-	311	299	-	-	-	-	1	-
Nebr.	5	-	-	-	1,051	1,492	1	-	-	-	-	-
Kans.	12	-	-	7	2,145	2,691	2	1	-	-	-	1
S. ATLANTIC	716	19	46	14	83,216	71,841	24	74	10	5	5	1
Del.	12	1	3	-	1,419	1,604	1	-	-	-	-	-
Md.	78	2	12	-	10,324	11,530	-	8	2	-	-	-
D.C.	103	-	-	-	6,901	5,925	-	1	-	-	-	-
Va.	74	2	16	1	7,320	7,422	1	3	-	-	-	1
W. Va.	2	-	6	-	985	996	-	-	-	-	-	-
N.C.	31	3	8	1	14,510	13,739	-	10	-	-	-	-
S.C.	17	-	-	-	7,725	8,884	1	5	-	-	3	-
Ga.	87	2	-	-	9,359	-	-	19	-	-	-	-
Fla.	312	9	1	12	24,673	21,741	21	28	8	5	2	-
E.S. CENTRAL	80	9	21	2	28,844	28,512	4	31	2	1	-	1
Ky.	13	3	9	1	3,356	3,170	1	7	-	-	-	-
Tenn.	31	1	2	1	11,330	11,373	2	2	1	1	-	-
Ala.	10	3	9	-	8,124	9,246	-	12	1	-	-	1
Miss.	6	2	1	-	6,034	4,723	1	10	-	-	-	-
W.S. CENTRAL	364	19	33	3	43,380	45,990	39	44	9	16	1	7
Ark.	15	-	-	-	3,851	4,357	3	4	1	-	-	-
La.	62	1	2	-	7,789	9,444	3	4	1	-	1	-
Okla.	17	2	8	-	5,065	4,769	1	1	1	-	-	-
Tex.	270	16	23	3	26,675	27,420	32	35	6	16	-	7
MOUNTAIN	150	5	14	1	10,550	10,728	36	36	4	7	-	7
Mont.	3	-	-	1	283	306	-	2	-	1	-	-
Idaho	1	-	-	-	346	356	-	-	-	-	-	-
Wyo.	4	-	2	-	248	271	-	1	-	-	-	-
Colo.	81	-	2	-	2,781	3,321	-	4	2	4	-	3
N. Mex.	6	-	1	-	1,076	1,254	6	10	-	-	-	-
Ariz.	36	3	7	-	3,383	3,080	21	11	2	1	-	2
Utah	8	-	1	-	454	456	-	2	-	-	-	-
Nev.	11	2	1	-	1,981	1,704	9	6	-	1	-	2
PACIFIC	1,315	19	64	4	50,128	53,202	152	131	21	16	3	81
Wash.	49	-	5	-	3,844	3,772	7	16	1	3	1	9
Oreg.	29	-	-	-	2,007	2,658	23	7	2	-	-	-
Calif.	1,215	13	57	4	42,417	44,752	119	105	18	13	2	60
Alaska	9	1	2	-	1,261	1,237	3	2	-	-	-	-
Hawaii	13	5	-	-	599	783	-	1	-	-	-	12
Guam	-	-	-	-	50	81	-	-	-	1	-	1
P.R.	56	-	3	-	969	1,566	3	8	-	6	-	7
V.I.	2	-	-	-	93	203	-	-	-	-	-	-
Pac. Trust Terr.	-	-	-	-	113	421	3	-	-	-	-	18
Amer. Samoa	-	U	-	-	14	-	U	U	U	U	U	1

N: Not notifiable U: Unavailable

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending May 31, 1986 and June 1, 1985 (22nd Week)

Reporting Area	Malaria	Measles (Rubeola)					Meningococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported *		Total									
	Cum. 1986	1986	Cum. 1986	1986	Cum. 1986	Cum. 1985	Cum. 1986	1986	Cum. 1986	1986	Cum. 1986	Cum. 1985	1986	Cum. 1986	Cum. 1985
UNITED STATES	309	136	2,777	35	152	1,331	1,311	161	1,757	29	1,037	654	8	233	240
NEW ENGLAND	18	7	23	4	4	100	100	1	36	1	52	31	-	4	8
Maine	-	-	-	-	-	-	21	-	-	-	2	2	-	-	-
N.H.	-	-	-	-	-	-	5	-	10	-	15	16	-	1	2
Vt.	1	-	-	-	-	-	14	-	-	1	3	2	-	-	-
Mass.	10	5	20	3†	3	96	19	-	1	-	16	4	-	-	6
R.I.	2	1	2	-§	-	-	14	-	6	-	1	4	-	2	-
Conn.	5	1	1	1§	1	4	27	1	19	-	15	3	-	1	-
MID. ATLANTIC	34	52	1,071	7†§	18	122	204	7	94	1	98	68	1	27	68
Upstate N.Y.	8	8	15	7†§	17	56	66	-	34	-	66	35	1	19	8
N.Y. City	11	39	219	-	1	35	39	-	5	-	3	9	-	5	40
N.J.	3	-	821	-	-	8	27	4	24	1	7	2	-	3	8
Pa.	12	5	16	-	-	23	72	3	31	-	22	22	-	-	12
E.N. CENTRAL	12	22	404	8	12	369	178	119	985	2	163	91	1	11	19
Ohio	3	-	-	8†	8	43	73	3	85	1	68	14	-	-	-
Ind.	-	-	-	-	-	1	17	1	19	-	19	11	-	-	-
Ill.	4	14	254	-	1	221	43	106	607	-	19	13	1	7	5
Mich.	5	8	8	-	-	50	43	9	148	-	20	13	-	3	13
Wis.	-	-	142	-	3	54	2	-	126	1	37	40	-	1	1
W.N. CENTRAL	7	24	151	2	16	8	69	1	64	8	60	54	-	8	16
Minn.	3	5	27	-	4	4	14	-	1	4	28	11	-	-	2
Iowa	1	17	17	-	1	-	9	1	13	-	9	3	-	-	-
Mo.	2	2	7	2§	6	2	24	-	12	-	4	13	-	1	5
N. Dak.	-	-	10	-	1	1	-	-	2	-	2	6	-	-	2
S. Dak.	-	-	-	-	-	-	3	-	1	4	7	1	-	-	-
Nebr.	1	-	-	-	-	-	7	-	-	-	-	3	-	-	-
Kans.	-	-	90	-	4	1	12	-	35	-	10	17	-	7	7
S. ATLANTIC	41	1	330	3	33	154	264	2	104	8	405	160	1	8	25
Del.	-	-	1	-	-	-	1	-	-	2	212	-	-	-	1
Md.	7	1	19	1§	8	20	35	-	6	-	62	67	-	-	1
D.C.	-	-	-	-§	-	2	3	-	-	-	-	-	-	-	-
Va.	8	-	14	1§	20	17	49	1	18	2	15	3	-	-	1
W. Va.	-	-	2	-	-	24	3	-	30	-	5	-	-	-	9
N.C.	4	-	1	-	1	3	43	1	10	1	19	8	-	-	-
S.C.	2	-	274	-	-	-	24	-	11	-	5	-	-	-	2
Ga.	4	-	7	-	1	8	40	-	10	1	70	51	-	-	-
Fla.	16	-	12	1†	3	80	66	-	19	2	17	31	1	8	11
E.S. CENTRAL	6	-	3	-	-	1	72	-	17	1	19	6	-	1	1
Ky.	2	-	-	-	-	-	12	-	3	-	1	1	-	1	1
Tenn.	-	-	1	-	-	-	30	-	12	-	5	1	-	-	-
Ala.	2	-	-	-	-	-	22	-	1	1	13	2	-	-	-
Miss.	2	-	2	-	-	1	8	-	1	-	-	2	-	-	-
W.S. CENTRAL	22	1	352	-	28	86	109	9	118	-	30	81	-	48	19
Ark.	-	1	276	-	2	-	15	-	7	-	2	11	-	-	1
La.	4	-	-	-	-	10	15	1	1	-	4	5	-	-	-
Okla.	2	-	6	-	4	-	14	N	N	-	24	65	-	-	1
Tex.	16	-	70	-	22	76	65	8	110	-	-	-	-	48	17
MOUNTAIN	9	11	204	6	16	378	52	11	176	3	104	32	-	5	4
Mont.	-	-	-	6§	7	136	7	-	5	-	6	3	-	-	-
Idaho	1	-	-	-	-	79	1	-	2	-	26	-	-	-	1
Wyo.	-	-	-	-	-	-	2	-	-	-	1	-	-	-	-
Colo.	2	-	2	-	4	6	9	1	8	3	27	10	-	-	-
N. Mex.	-	5	21	-	5	3	N	N	N	-	9	4	-	-	2
Ariz.	3	6	181	-	-	154	14	10	149	-	24	9	-	1	1
Utah	2	-	-	-	-	-	7	-	9	-	11	6	-	1	-
Nev.	1	-	-	-	-	-	6	-	3	-	-	-	-	3	-
PACIFIC	160	18	239	5	25	113	263	11	163	5	106	131	5	121	80
Wash.	13	6	53	4†	11	1	35	2	7	3	41	20	-	3	2
Oreg.	12	-	-	1†	3	3	20	N	N	-	8	17	-	-	1
Calif.	135	12	187	-	10	97	198	9	143	2	53	87	5	116	49
Alaska	-	-	-	-	-	-	9	-	4	-	1	4	-	-	1
Hawaii	-	-	19	-	1	12	1	-	9	-	3	3	-	2	27
Guam	1	-	3	-	-	10	-	1	3	-	-	-	-	2	1
P.R.	3	-	18	-	-	46	3	-	16	-	5	2	-	58	19
V.I.	-	-	-	-	-	10	-	-	9	-	-	-	-	-	-
Pac. Trust Terr.	-	-	-	-	-	-	1	-	3	-	-	-	-	-	-
Amer. Samoa	-	U	1	U	-	-	-	U	-	U	-	-	U	-	-

*For measles only, imported cases includes both out-of-state and international importations.

N: Not notifiable U: Unavailable †International §Out-of-state

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending May 31, 1986 and June 1, 1985 (22nd Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1986	Cum. 1985	1986	Cum. 1986	Cum. 1985	Cum. 1986	Cum. 1986	Cum. 1985	Cum. 1986
UNITED STATES	10,590	10,432	5	8,536	8,337	29	104	111	2,273
NEW ENGLAND	209	235	-	280	283	-	4	1	3
Maine	13	7	-	25	19	-	-	-	-
N.H.	7	5	-	7	11	-	-	-	-
Vt.	6	-	-	9	4	-	-	-	-
Mass.	104	121	-	135	172	-	3	1	-
R.I.	13	7	-	19	21	-	-	-	1
Conn.	66	95	-	85	56	-	1	-	2
MID. ATLANTIC	1,565	1,431	-	1,716	1,514	-	10	1	182
Upstate N.Y.	73	108	-	253	250	-	1	1	29
N.Y. City	853	883	-	828	768	-	5	-	1
N.J.	291	307	-	335	170	-	3	-	6
Pa.	348	133	-	300	326	-	1	-	146
E.N. CENTRAL	429	497	2	1,041	1,026	-	8	21	47
Ohio	60	61	1	180	193	-	1	21	5
Ind.	50	36	-	119	126	-	-	-	9
Ill.	231	267	-	469	449	-	1	-	15
Mich.	62	109	1	221	201	-	5	-	7
Wis.	26	24	-	52	57	-	1	-	11
W.N. CENTRAL	109	110	1	248	216	8	5	5	353
Minn.	18	26	-	58	40	-	1	1	42
Iowa	5	14	-	22	33	1	-	-	77
Mo.	58	48	-	127	99	7	4	1	40
N. Dak.	2	-	-	4	2	-	-	-	92
S. Dak.	1	4	-	10	12	-	-	-	66
Nebr.	10	6	1	4	9	-	-	-	5
Kans.	15	12	-	23	21	-	-	3	31
S. ATLANTIC	2,947	2,583	-	1,653	1,728	4	14	35	550
Del.	20	16	-	19	16	-	-	-	-
Md.	193	171	-	126	157	1	4	5	306
D.C.	144	154	-	53	78	-	1	-	-
Va.	181	135	-	149	145	1	3	7	87
W. Va.	8	4	-	47	42	-	2	4	11
N.C.	209	280	-	219	208	1	2	8	3
S.C.	287	335	-	188	199	-	-	9	16
Ga.	383	-	-	252	279	1	-	2	70
Fla.	1,522	1,488	-	600	604	-	2	-	57
E.S. CENTRAL	721	912	-	756	754	3	1	15	131
Ky.	31	33	-	194	157	2	-	1	38
Tenn.	261	253	-	209	233	1	-	6	56
Ala.	238	291	-	251	246	-	-	2	37
Miss.	191	335	-	102	118	-	1	6	-
W.S. CENTRAL	2,225	2,809	-	1,035	906	11	6	28	358
Ark.	109	126	-	128	101	8	-	1	83
La.	371	443	-	186	147	1	-	-	7
Okla.	65	78	-	97	115	2	1	22	29
Tex.	1,680	1,962	-	624	543	-	5	5	239
MOUNTAIN	250	331	-	188	209	2	6	5	375
Mont.	3	1	-	8	29	-	1	2	136
Idaho	5	3	-	5	11	-	-	-	-
Wyo.	-	5	-	-	5	-	-	1	175
Colo.	78	77	-	10	27	-	1	2	-
N. Mex.	33	45	-	40	39	1	-	-	3
Ariz.	96	179	-	92	86	-	2	-	61
Utah	4	3	-	18	6	1	2	-	-
Nev.	31	18	-	15	6	-	-	-	-
PACIFIC	2,135	1,724	2	1,619	1,701	1	50	-	274
Wash.	48	58	-	91	96	-	2	-	-
Oreg.	43	37	-	59	58	-	-	-	-
Calif.	2,025	1,595	2	1,339	1,415	-	45	-	266
Alaska	-	1	-	27	56	1	1	-	8
Hawaii	19	33	-	103	76	-	2	-	-
Guam	1	2	-	30	19	-	-	-	-
P.R.	347	363	-	124	138	-	2	-	19
V.I.	-	1	-	1	1	-	-	-	-
Pac. Trust Terr.	112	40	-	15	29	-	27	-	-
Amer. Samoa	-	-	U	3	-	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending May 31, 1986 (22nd Week)

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	609	428	120	28	11	22	44
Boston, Mass.	129	72	41	6	3	7	15
Bridgeport, Conn.	44	35	5	3	-	1	2
Cambridge, Mass.	19	16	3	-	-	-	2
Fall River, Mass.	31	24	5	2	-	-	1
Hartford, Conn.	69	45	12	6	2	4	2
Lowell, Mass.	36	24	11	-	1	-	-
Lynn, Mass.	16	12	3	-	1	-	1
New Bedford, Mass.	22	18	3	-	-	1	1
New Haven, Conn.	39	22	9	3	1	4	1
Providence, R.I.	73	53	10	3	1	6	5
Somerville, Mass.	13	9	2	2	-	-	2
Springfield, Mass.	49	41	6	1	1	-	5
Waterbury, Conn.	23	18	2	2	1	-	2
Worcester, Mass.	46	38	8	-	-	-	5
MID ATLANTIC	2,381	1,641	485	229	65	60	110
Albany, N.Y.	62	39	10	6	3	4	-
Allentown, Pa.	21	18	2	1	-	-	-
Buffalo, N.Y.	104	72	19	7	1	5	10
Camden, N.J.	48	32	12	1	1	2	2
Elizabeth, N.J.	30	21	5	2	1	1	-
Erie, Pa.†	25	19	3	2	-	1	1
Jersey City, N.J.	40	30	7	3	-	-	1
N.Y. City, N.Y.	1,244	780	255	149	37	23	65
Newark, N.J.	57	29	12	7	5	3	1
Paterson, N.J. §	27	19	3	3	-	2	1
Philadelphia, Pa.	298	189	64	25	9	11	12
Pittsburgh, Pa.†	60	35	17	5	1	2	1
Reading, Pa.	38	28	7	3	-	-	1
Rochester, N.Y.	100	71	20	5	3	1	6
Schenectady, N.Y.	33	23	8	1	1	-	-
Scranton, Pa.†	38	30	6	2	-	-	2
Syracuse, N.Y.	75	51	16	3	2	3	6
Trenton, N.J.	37	22	10	3	-	2	-
Utica, N.Y.	23	17	5	1	-	-	1
Yonkers, N.Y.	21	16	4	-	1	-	-
E.N. CENTRAL	2,154	1,401	472	150	55	76	81
Akron, Ohio	80	52	17	3	4	4	-
Canton, Ohio	34	23	10	1	-	-	1
Chicago, Ill.§	564	361	125	46	10	22	16
Cincinnati, Ohio	98	57	19	10	3	9	7
Cleveland, Ohio	142	87	32	12	4	7	3
Columbus, Ohio	131	77	35	4	6	9	4
Dayton, Ohio	102	74	15	7	1	5	-
Detroit, Mich.	241	157	53	19	6	6	7
Evansville, Ind.	49	36	6	5	1	1	5
Fort Wayne, Ind.	49	30	12	3	3	1	2
Gary, Ind.	19	11	3	4	1	-	1
Grand Rapids, Mich.	50	33	6	4	3	4	7
Indianapolis, Ind.	145	88	39	11	4	3	3
Madison, Wis.	34	26	5	2	-	1	6
Milwaukee, Wis.	129	87	30	5	6	1	9
Peoria, Ill.	33	27	4	1	-	1	2
Rockford, Ill.	40	30	5	5	-	-	1
South Bend, Ind.	48	35	12	1	-	-	2
Toledo, Ohio	104	69	25	6	2	2	4
Youngstown, Ohio	62	41	19	1	1	-	1
W.N. CENTRAL	587	402	103	39	21	22	26
Des Moines, Iowa	41	27	6	3	2	3	1
Duluth, Minn.	19	13	5	-	-	1	2
Kansas City, Kans.	25	11	8	5	1	-	1
Kansas City, Mo.	107	69	23	9	3	3	8
Lincoln, Nebr.	39	29	5	-	3	2	5
Minneapolis, Minn.	57	46	10	1	-	-	4
Omaha, Nebr.	51	32	9	5	2	3	3
St. Louis, Mo.	145	95	19	15	9	7	-
St. Paul, Minn.	73	55	14	1	1	2	1
Wichita, Kans.	30	25	4	-	-	1	1
S. ATLANTIC	1,135	693	292	88	30	32	36
Atlanta, Ga.	111	69	31	10	-	1	3
Baltimore, Md.	210	131	54	14	7	4	3
Charlotte, N.C.	75	47	18	5	5	-	6
Jacksonville, Fla.	116	79	22	5	5	5	-
Miami, Fla.	109	65	30	9	2	3	4
Norfolk, Va.	53	28	14	7	2	2	4
Richmond, Va.	59	33	17	4	1	4	6
Savannah, Ga.	47	31	11	3	1	1	3
St. Petersburg, Fla.	110	82	20	4	2	2	4
Tampa, Fla.	61	36	13	9	2	1	1
Washington, D.C.	180	78	54	17	2	9	2
Wilmington, Del.	24	14	8	1	1	-	-
E.S. CENTRAL	681	433	152	49	26	21	32
Birmingham, Ala.	87	45	25	8	5	4	4
Chattanooga, Tenn.	48	33	10	2	1	2	6
Knoxville, Tenn.	90	59	18	9	4	-	5
Louisville, Ky.	130	90	26	8	2	4	7
Memphis, Tenn.§	176	112	39	12	5	8	6
Mobile, Ala.	25	20	4	-	1	-	-
Montgomery, Ala.	31	19	8	1	1	2	-
Nashville, Tenn.	94	55	22	9	7	1	4
W.S. CENTRAL	1,196	744	244	108	65	35	42
Austin, Tex.	41	33	4	2	2	-	4
Baton Rouge, La.	17	9	3	2	3	-	-
Corpus Christi, Tex.	35	25	6	2	-	2	1
Dallas, Tex.	150	82	38	16	12	2	6
El Paso, Tex.	54	33	11	3	4	3	2
Fort Worth, Tex.	90	54	18	8	8	2	3
Houston, Tex.	377	211	87	47	17	15	5
Little Rock, Ark.	61	39	13	3	3	3	6
New Orleans, La.	111	66	25	13	4	3	-
San Antonio, Tex.	128	92	17	8	8	3	10
Shreveport, La.	61	45	13	2	1	-	-
Tulsa, Okla.	71	55	9	2	3	2	5
MOUNTAIN	564	356	127	43	18	20	24
Albuquerque, N.Mex.	44	30	11	1	-	2	-
Colo. Springs, Colo.	31	22	7	2	-	-	4
Denver, Colo.	99	67	18	9	2	3	4
Las Vegas, Nev.	70	43	17	6	2	2	6
Ogden, Utah	24	12	8	4	-	-	2
Phoenix, Ariz.	129	68	36	10	7	8	4
Pueblo, Colo.	24	16	7	-	-	1	2
Salt Lake City, Utah	55	39	6	4	3	3	2
Tucson, Ariz.	88	59	17	7	4	1	-
PACIFIC	1,636	1,030	338	166	51	48	101
Berkeley, Calif.	18	15	3	-	-	-	1
Fresno, Calif.	71	46	13	6	4	2	8
Glendale, Calif.	30	24	4	2	-	-	2
Honolulu, Hawaii	60	36	15	6	2	1	6
Long Beach, Calif.	69	47	12	2	4	4	9
Los Angeles, Calif.	403	228	95	51	14	12	14
Oakland, Calif.	72	44	14	9	2	3	12
Pasadena, Calif.	45	31	9	1	1	3	1
Portland, Oreg.	94	57	22	8	6	1	6
Sacramento, Calif.	143	102	22	12	4	3	10
San Diego, Calif.	117	66	32	11	-	8	7
San Francisco, Calif.	152	88	28	31	3	4	3
San Jose, Calif.	152	98	35	16	3	-	13
Seattle, Wash.	123	86	20	9	6	2	4
Spokane, Wash.	50	36	8	-	2	4	5
Tacoma, Wash.	37	28	6	2	-	1	-
TOTAL	10,943††	7,028	2,333	900	342	336	496

* Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

** Pneumonia and influenza.

† Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

†† Total includes unknown ages.

§ Data not available. Figures are estimates based on average of past 4 weeks.

Table V. Estimated years of potential life lost before age 65 and cause-specific mortality, by cause of death — United States, 1984

Cause of mortality (Ninth Revision ICD)	Years of potential life lost by persons dying in 1984*	Cause-specific mortality† (rate/100,000)
ALL CAUSES (Total)	11,761,000	866.7
Unintentional injuries§ (E800-E949)	2,308,000	40.1
Malignant neoplasms (140-208)	1,803,000	191.6
Diseases of the heart (390-398, 402, 404-429)	1,563,000	324.4
Suicide, homicide (E950-E978)	1,247,000	20.6
Congenital anomalies (740-759)	684,000	5.6
Prematurity¶ (765, 769)	470,000	3.5
Sudden infant death syndrome (798)	314,000	2.4
Cerebrovascular diseases (430-438)	266,000	65.6
Chronic liver diseases and cirrhosis (571)	233,000	11.3
Pneumonia and influenza (480-487)	163,000	25.0
Chronic obstructive pulmonary diseases (490-496)	123,000	29.8
Diabetes mellitus (250)	119,000	15.6

*For details of calculation, see footnotes for Table V, *MMWR* 1986;35:27.

†Cause-specific mortality rates as reported in the MVSR are compiled from a 10% sample of all deaths.

§Equivalent to accidents and adverse effects.

¶Category derived from disorders relating to short gestation and respiratory distress syndrome.

Suicide and Homicide — Continued

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Current Trends

Measles — United States, 1985

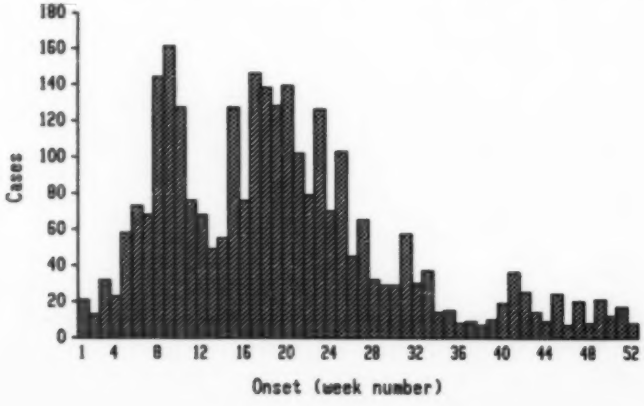
Through December 28, 2,704 cases of measles in the United States were reported to *MMWR* for 1985. Detailed information reported to CDC's Division of Immunization is available for a provisional total of 2,813 cases for 1985, which includes some late reported cases. The 2,813 cases represent an 8.7% increase over the 2,587 cases reported in 1984. The overall incidence rate increased from 1.1 cases per 100,000 population in 1984 to 1.2/100,000 in 1985. Ten states accounted for 2,106 (74.9%) cases: Texas (443 cases), Illinois (360), California (270), Arizona (240), Washington (174), Montana (139), Idaho (132), Massachusetts (118), Maryland (115), and Florida (115). Ten reporting areas had incidence rates greater than 2/100,000 population: Arizona, District of Columbia, Hawaii, Idaho, Illinois, Maryland, Massachusetts, Montana, Texas, and Washington. During 1984 and 1985, 14 and 12 states, respectively, reported no measles cases (indigenous or imported). Of the nation's 3,139 counties, 220 (7.0%) reported measles cases in 1985, compared with 210 (6.7%) in 1984.

Of the 2,813 cases, 2,718 (96.6%) met the standard case definition for measles,* and 1,071 (38.1%) were serologically confirmed. Most of the patients (68%) had rash onset between weeks 8 and 25 (weeks ending February 23 and June 22) (Figure 4).

In 1984, the highest incidence rate was reported among children 10-14 years of age (Table 3). By comparison, in 1985, the highest incidence rate occurred among preschool-aged children (4.7/100,000), followed by persons 15-19 years of age (4.5/100,000). Of the 826 preschool-aged children with measles, 211 (25.5%) were infants under 1 year of age; 143 (17.3%) were 12-14 months of age; 41 (5.0%) were 15 months of age; and 431 (52.2%) were 16 months-4 years of age.

*Fever (38.3 C [101 F] or higher, if measured); generalized rash lasting 3 or more days; and at least one of the following: cough, coryza, conjunctivitis.

FIGURE 4. Reported measles cases, by week of rash onset — United States, 1985



Measles — Continued

The setting of transmission was reported for 1,864 (66.3%) measles patients: 1,129 (60.6%)—school†; 278 (14.9%)—home; 87 (4.7%)—medical settings; 94 (5.0%)—day care; 94 (5.0%)—church; and 182 (9.8%)—other (including sporting events and summer camp). Of the 2,813 total cases, 354 (12.6%) were reported on 26 college campuses (Table 4).

One hundred twenty-one cases (4.3%) were international importations. An additional 166 (5.9%) cases were epidemiologically linked to an international importation within two generations of infection. Therefore, 287 (10.2% of all cases) were classified as international importations during this period (*1*).

Vaccination status of patients in 1984 and 1985 was similar. Of the 2,813 measles patients in 1985, 1,239 (44.0%) had been appropriately vaccinated (on or after the first birthday); 381 had been vaccinated at 12-14 months of age (Table 5). A total of 1,442 measles patients were unvaccinated, and 132 had histories of inadequate vaccination (vaccinated before the first birthday).

Of the 2,804 cases with known preventability status, 820 (29.2%) were classified as preventable (*1*). The highest proportion of preventable cases occurred among persons who

†Includes kindergarten through college.

TABLE 3. Age distribution and estimated incidence rates of measles — United States, 1984 and 1985

Age group (yrs.)	1984 No.	1984 (%)	1984 Rate†	1985* No.	1985* (%)	1985* Rate†	Rate change §
0-4	617	(23.9)	3.5	826	(29.5)	4.7	+34.3%
5-9	278	(10.8)	1.7	255	(9.1)	1.6	-7.9%
10-14	671	(26.0)	3.8	503	(18.0)	2.9	-24.8%
15-19	676	(26.2)	3.6	843	(30.1)	4.5	+25.1%
20-24	204	(7.9)	1.0	231	(8.2)	1.1	+13.2%
≥ 25	137	(5.3)	0.1	143	(5.1)	0.1	-4.4%
Total	**2,583¶**	**(100.0)**	**1.1**	**2,801¶**	**(100.0)**	**1.2**	**+8.8%**

*Provisional data.

†Per 100,000 population. Rates estimated by extrapolating age distribution of patients with known age to the entire number of reported cases.

§Based on actual, not rounded, rates.

¶The difference between this number and that in the text reflects cases of unknown age.

TABLE 4. Reported measles cases on college campuses — United States, 1980-1985

Year	Total U.S. cases	Campus cases No.	Campus cases (%)	No. colleges reporting measles
1980	13,506	200	(1.5)	36
1981	3,124	101	(3.3)	19
1982	1,714	115	(6.7)	14
1983	1,497	296	(19.8)	19
1984	2,587	67	(2.6)	17
1985	2,813*	354	(12.6)	26

*Provisional data.

Measles — Continued

were not of school age: 73.8% of cases among children 16 months-4 years of age were preventable (Table 6). Only 21.7% of cases among school-aged persons (5-19 years of age) were preventable. However, 347 (42.3%) of all 820 preventable cases occurred in this age group.

Of the 1,984 nonpreventable cases, 395 (19.9%) were among children too young for routine vaccination (under 16 months of age), and 71 (3.6%) persons were too old (born before 1957). Of the 1,518 between 16 months and 28 years of age, 1,207 (79.5%) had been vaccinated on or after the first birthday; 14 (0.9%) had a prior physician diagnosis of measles; 48

TABLE 5. Age of measles patients at most recent vaccination — United States, 1984 and 1985

Age at vaccination	1984 No.	1984 (%)	1985* No.	1985* (%)
< 12 mos.	185	(7.3)	132	(4.7)
12-14 mos.	344	(13.5)	381	(13.5)
15 mos.	52	(2.0)	77	(2.7)
16 mos.-4 yrs.	387	(15.2)	463	(16.5)
5-9 yrs.	166	(6.5)	217	(7.7)
10-14 yrs.	36	(1.4)	91	(3.2)
15-19 yrs.	8	(0.3)	8	(0.3)
≥ 20 yrs.	2	(0.1)	2	(0.1)
Unknown (> 12 mos.)	4	(0.2)	0	(0.0)
Unvaccinated	1,359	(53.4)	1,442	(51.3)
Total	**2,543†**	**(100.0)**	**2,813**	**(100.0)**

*Provisional data.

†The difference between this number and that in the text reflects cases with unknown vaccination status.

TABLE 6. Age distribution and preventability of measles cases — United States, 1984 and 1985

Age group	1984 Total cases	1984 Preventable cases No.	1984 Preventable cases (%)	1985* Total cases	1985* Preventable cases No.	1985* Preventable cases (%)
≤ 15 mos.	336	0	(0.0)	395	0	(0.0)
16 mos.-4 yrs.	286	210	(73.4)	431	318	(73.8)
5-9 yrs.	283	69	(24.4)	255	63	(24.7)
10-14 yrs.	679	180	(26.5)	503	93	(18.5)
15-19 yrs.	650	238	(36.6)	843	191	(22.7)
20-24 yrs.	173	135	(78.0)	231	98	(42.4)
25-29 yrs.	75	42	(56.0)	72	57	(79.2)
≥ 30 yrs.	61	0	(0.0)	71	0	(0.0)
Unknown	0	0	(0.0)	3†	0	(0.0)
Total	**2,543§**	**874**	**(34.4)**	**2,804§**	**820**	**(29.2)**

*Provisional data.

†Three of the 12 patients of unknown age had known preventability status (nonpreventable).

§The difference between this number and that in the text reflects patients with unknown preventability status.

Measles — Continued

(3.2%) were non-U.S. citizens; and 248 (16.3%) had medical contraindications or other exemptions under state law (Table 7).

Reported by Div of Immunization, Center for Prevention Svcs, CDC.

Editorial Note: In the prevaccine era, an average of 500,000 cases were reported each year (*2*). Since measles vaccine was licensed in 1963, the incidence of measles has declined markedly. While the number of cases increased 8.7% from 1984 to 1985, the provisional total of 2,813 cases still represents only 0.6% of the average number of reported cases in the prevaccine era. Since 1981, the reported occurrence of measles has stabilized between approximately 1,500 and 3,200 cases. However, slight increases have been noted annually since the record low 1,497 cases reported in 1983.

The highest incidence rate in 1985 occurred in the preschool-aged population, which accounted for approximately 30% of all reported cases. Recent outbreaks involving a substantial proportion of preschool-aged children have also occurred (*3,4*). The increased incidence of measles among preschoolers is a source of concern, since the risk of serious complications of measles illness is highest in the youngest age groups (*2*). Seventy-four percent of cases among children 16 months to 4 years of age were preventable, emphasizing the need to vaccinate children promptly at the recommended age for routine vaccination (15 months).

The next highest incidence rate in 1985 occurred among persons 15-19 years of age, who accounted for another 30% of total cases. The increased rate in this age group over 1984 was due in part to the large number of outbreaks on college campuses. The proportion of total cases occurring on college campuses in 1985 was higher than that of any of the previous 6 years, except 1983 (Table 4). An increased number of colleges and universities are now requiring evidence of immunity to measles for matriculation, which should decrease measles in this population (*5*).

Persons of school age accounted for the largest percentage of all preventable cases, and schools were the setting of transmission for the majority of cases. Therefore, continued enforcement of current school immunization laws is important for further reduction of measles in the United States.

TABLE 7. Reasons measles cases were classified as nonpreventable — United States, 1985*

Causes of nonpreventability	No. cases (%)			Percentage of total cases†
Persons > 16 mos. of age			395 (19.9)	14.1
Persons born before 1957			71 (3.6)	2.5
Persons 16 mos.-28 yrs. of age			1,518 (76.5)	54.1
Appropriately vaccinated	1,207	(79.5)		
Prior M.D. diagnosis	14	(0.9)		
Non-U.S. citizens	48	(3.2)		
Exemptions§	248	(16.3)		
Laboratory evidence of immunity	1	(0.1)		
Total			**1,984 (100.0)**	**70.8**

*Provisional data.

†Percentage of total cases with known preventability status (2,804).

§Medical—8; religious—204; philosophic—36.

Measles — Continued

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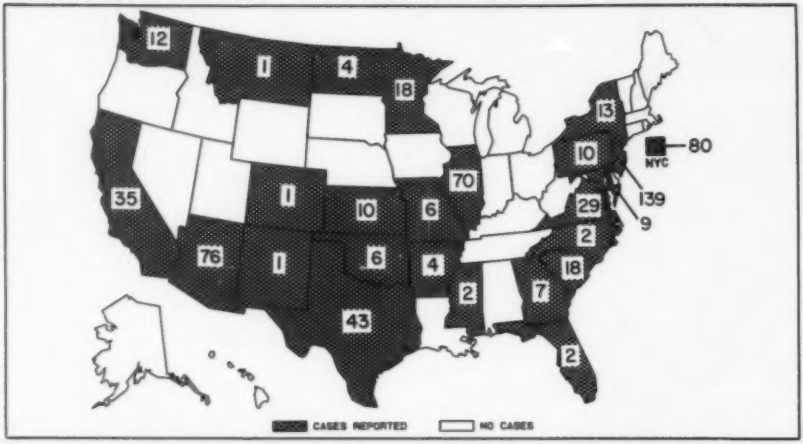
FIGURE I. Reported measles cases — United States, weeks 18-21, 1986



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The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Such reports and any other matters pertaining to editorial or other textual considerations should be addressed to: ATTN: Editor, *Morbidity and Mortality Weekly Report,* Centers for Disease Control, Atlanta, Georgia 30333.

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